AMENDMENTS TO THE CLAIMS

1. (Currently amended) A process for producing a siliceous layer capable of biomass immobilization and selectively cutting off macromolecules having a molecular weight higher than a selected threshold, comprising the steps of:

a) supplying a gas flow of a gas carrier saturated by a mixture of ~~silicon alkoxides selected from the group comprising (1) $Si(OR)_4$, (2) $SiH(OR)_3$, (3) $R'Si(OR)_3$ and (4) $R'SiH(OR)_2$~~ (1) $Si(OR)_4$, (2) $R'Si(OR)_3$ and (3) $R'SiH(OR)_2$, wherein R and R', equal to or different from each other, are alkyl and/or aryl groups, wherein said gas flow is prepared by bubbling the gas carrier into a liquid mixture of ~~said alkoxides in the ratio of (1) 40-85/ (2) 0-60/ (3) 0-60/ (4) 0-60 (% v/v)~~ (1), (2) and (3) in a ratio of either (1) 65-79%, (2) 1-10%, (3) 20-25% v/v or (1) 53-70%, (2) 10-22%, (3) 15-25% v/v, at a temperature of from 20 to 180 °C, ~~preferably of from 20 to 100° C,~~ and

b) exposing a support comprising a biomass to the gas flow of step a), wherein said selected threshold of molecular weight is chosen in the range of between 10,000 Dalton and 150,000 Dalton and wherein the ratio ~~between the (1), (2), (3) and (4) Si derivatives~~ of (1), (2) and (3) in step a) is chosen as a function of the molecular weight of the macromolecules to be cut off.

2. (Original) A process according to claim 1, wherein R is ethyl or methyl and R' is methyl.

3. (Currently amended) A process according to claim 1, wherein the ratio ~~between the (1), (2), (3) and (4) Si derivatives~~ of (1), (2) and (3) in step a) is chosen in order to cut off macromolecules having a molecular weight higher than 10,000 Dalton.

4. (Currently amended) A process according to claim 1, wherein the ratio ~~between the (1), (2), (3) and (4) Si derivatives~~ of (1), (2) and (3) in step a) is chosen in order to cut off macromolecules having a molecular weight higher than 70,000 Dalton.

5. (Currently amended) A process according to claim 1, wherein the ratio ~~between the (1), (2), (3) and (4) Si derivatives~~ of (1), (2) and (3) in step a) is chosen in order to cut off macromolecules having a molecular weight higher than 90,000 Dalton.

6. (Currently amended) A process according to claim 1, wherein the ratio ~~between the (1), (2), (3) and (4) Si derivatives~~ of (1), (2) and (3) in step a) is chosen in order to cut off macromolecules having a molecular weight higher than 150,000 Dalton.

7. (Currently amended) A process according to claim 1, wherein the content of $R'Si(OR)_3$ ~~derivative~~ in the mixture of step a) is up to about 10% v/v and [[it]] is added in replacement of a same amount of $Si(OR)_4$.

8. (Canceled).

9. (Currently amended) A process according to claim 1, wherein the content of $R'Si(OR)_3$ ~~derivative~~ in the mixture of step a) is between about 10% v/v and about 20% v/v and [[it]] is added in replacement of a same amount of $Si(OR)_4$.

10. (Canceled).

11. (Canceled).

12. (Currently amended) A process according to claim 1, wherein the total gas flow of step a) is [[of]] from 0.05 to 10 L/min for exposing times corresponding to from 1 to 100 mL of total gas per square centimeter of exposed surface.

13. (Original) A process according to claim 1, wherein the support of step b) is a matrix which adheres to a scaffolding material.

14. (Currently amended) A process according to claim 1, wherein the support of step b) is a matrix in the form of ~~microsphere~~ microspheres having ~~preferably~~ a diameter of from 0.05 to 1.0 mm.

15. (Currently amended) A process according to claim 1, wherein the support of step b) is a matrix in the form of ~~microsphere~~ microspheres having ~~preferably~~ a diameter of from 0.05 to 1.0 mm and wherein the matrix in the form of ~~microsphere~~ microspheres is without a scaffolding material.

16. (Original) A process according to claim 1, wherein the support of step b) is a scaffolding material without a matrix and the biomass is directly supported on said scaffolding material.

17. (Currently amended) A process according to claim 1, wherein the siliceous layer has a thickness of from 0.01 to 10 μm~~, preferably from 0.05 to 0.3 μm~~.

18. (Currently amended) A process according to claim 1, wherein the siliceous layer has a critical shear thinning stress higher than 10 Pa~~, preferably a shear thinning stress of from 12 to 20 Pa~~.

19. (Currently amended) A process according to claim 1, wherein the [[said]] carrier gas is air.

20-26. (Canceled).

27. (New) A process according to claim 1, wherein the gas flow is prepared at a temperature of from approximately 20 °C to approximately 100 °C.

28. (New) A process according to claim 17, wherein the siliceous layer has a thickness of from 0.05 to 0.3 μm.

29. (New) A process according to claim 18, wherein the siliceous layer has a critical shear thinning stress of from 12 to 20 Pa.